Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JYRKI HUOVILA, ERKKI ILMONIEMI,
MICHAEL ODELL and ANTTI SUONPERA

Appeal No. 1999-0337
Application 08/323,839

HEARD: AUGUST 16, 2000

Before CALVERT, McQUADE and JENNIFER D. BAHR, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Jyrki Huovila et al. appeal from the final rejection of claims 1 through 17, all of the claims pending in the application. We affirm-in-part.

THE INVENTION

The invention relates to the field of papermaking, and

more particularly to "a stock feed system for a multi-layer headbox and a method in the operation of a multi-layer headbox" (specification, page 1). Claim 1 is illustrative and reads as follows:

1. Stock feed system in combination with a multi-layer headbox having at least two inlet headers into each of which a respective stock flow is passed and which extend in a direction transverse to a flow direction of the respective stock flow, comprising

a single fresh stock storage tank,

a branching member,

first passage means for continuously passing a single flow of fresh stock from said single storage tank to said branching member where said single flow of fresh stock is divided into a plurality of divided stock flows without storing said single flow of fresh stock between said single fresh stock tank and said branching member,

second passage means for continuously passing each of said plurality of divided stock flows from said branching member into a respective one of said at least two inlet headers in said headbox without storing said divided stock flows between said branching member and said respective inlet header, and

means for independently adding chemicals and/or fillers to each of said plurality of divided stock flows during the flow of said plurality of divided stock flows after said branching member and before said plurality of divided stock flows enter into said headbox such that stock in each inlet header has an independently controllable chemical and/or filler characteristic.

THE PRIOR ART

The references relied upon by the examiner as evidence of obviousness are:

Schacht	2,077,015	Apr. 13, 1937
Booth	2,315,892	Apr. 6, 1943
Beck	3,598,696	Aug. 10, 1971
Justus	4,086,130	Apr. 25, 1978

THE REJECTIONS

Claims 1 through 3, 5 through 7 and 9 through 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Beck in view of Booth.

Claims 4 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Beck in view of Booth, Justus and Schacht.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 17 and 20) and to the examiner's answer (Paper No. 18) for the respective positions of the appellants and the examiner with regard to the merits of these rejections.[1]

[1] The unpublished technical article appended to the main brief and discussed on page 4 thereof has not been properly authenticated and has no apparent relevance to the specific issues raised in this appeal. Accordingly, we have considered the article only to the extent that it embodies general background information relating to the field of the invention.

DISCUSSION

Beck, the examiner's primary reference, discloses a multi--layer headbox for a paper making machine. The headbox 10 includes a plurality of stock receiving chambers 13, 14 and 15, turbulence generators 46, 47 and 48, tube-type stock distributors 49, 50 and 51 and slice openings 20, 24 and 29, these elements being arranged as shown in Figure 1. Beck states that

> [t]he stock receiving chambers 13, 14 and 15 may be supplied from a common stock delivery and control system, or from a plurality of separate stock delivery and control systems, as indicated by reference numerals 56, 57 and 58. By utilizing separate stock delivery and control systems, the stock applied to the distinct stock delivery chambers may be of different quality or character to enable the headbox to form paper sheets having specific qualities. For example, the stock receiving chambers 13 and 15 may receive a stock slurry containing fillers and clays, while the stock receiving chamber 14 receives a stock slurry which contains strength fibers and chemicals. Additionally, different colored stocks may be supplied to different ones of the stock receiving chambers to produce a mottled or marbleized effect on the sheet being formed [column 4, lines 40 through 54].

It is not disputed that Beck's disclosure of the headbox embodiment having the common stock delivery and control system teaches or would have suggested an apparatus meeting all of

the limitations in independent apparatus claims 1 and 17 except for those requiring means for independently adding chemicals and/or fillers to each of a plurality of divided stock flows. Similarly, it is not disputed that Beck teaches or would have suggested a method meeting all of the limitations in independent method claim 5 except for that requiring the step of independently adding chemicals and/or fillers to at least one of a plurality of divided stock flows.

Booth discloses a multi-ply paper board manufacturing process that "contemplates the use of water soluble inorganic chemicals which react to form a precipitate in the stock stream of the desired ply or plies to retard or restrain the rate of water drainage therefrom" (page 1, column 1, lines 9 through 13). Conventionally, the multiple plies are separately formed on individual cylinder molds (see page 1, column 1, lines 24 through 46), with the inner or filler plies being uniformly prepared by common beating and jordaning equipment (see page 1, column 1, lines 47 through 53; and page

1, column 2, lines 15 through 21). The following passage describes Booth's departure from the customary preparation of the inner or filler plies:

> it has been found that, by the addition of appropriate material, of which at least a portion is applied after the water suspension of stock has been divided for delivery to the several molds, it is possible to control the rate of drainage from the several plies and from the consolidated wet web in a more logical manner and which assures desirable results which have hitherto been unobtainable except with additional cost for mechanical equipment and cost for operation of such additional equipment.
>
> In practice, it has been found desirable to apply two or more chemical reagents, for example, water soluble inorganic chemicals, which mutually react to form an insoluble precipitate to cause slower water drainage. One chemical may be added at or before the division of the stock referred to above, or after the division of the water suspension of stock to be delivered to the several molds has been effected. The other chemical used should be applied after the stock has been divided into the separate streams. In certain instances it is desirable to provide diverse treatments for the several plies of stock [page 1, column 2, lines 22 through 46].

In combining Beck and Booth to reject independent claims 1, 5 and 17, the examiner has concluded that "it would have been obvious to modify Beck, with Booth in order to provide diverse treatments for the different plies of stock thus forming divided stock flows with different properties, as

taught by Booth" (answer, page 4). This proposed modification of Beck pertains to the headbox embodiment having the common stock delivery and control system.

The teachings of Booth relied upon by the examiner to support the foregoing conclusion of obviousness are clearly limited to the preparation and treatment of the inner or filler plies of a paper board product. While these teachings would have suggested providing Beck's apparatus and method with a means for and step of independently adding chemicals to the stock flow entering the middle or inner headbox chamber 14 to control the drainage characteristics of Beck's inner ply, they would not have suggested the provision of a means for or step of independently adding chemicals to the stock flows entering the outer stock receiving chambers 13 and 15 which form Beck's surface or skin plies.

Claims 1 and 17 require means for independently adding chemicals and/or fillers to "each" of a plurality of stock flows. Since Booth would have suggested adding chemicals only to Beck's inner or middle stock flow, the examiner's conclusion of obviousness with respect to the subject matter recited in claims 1 and 17 is unsound.

Claim 5 is broader than claims 1 and 17 in that it requires the step of independently adding chemicals and/or fillers only to "at least one" of a plurality of divided stock flows. Because Booth would have suggested the step of independently adding chemicals to Beck's inner flow, i.e., to at least one of Beck's stock flows, the examiner's conclusion of obviousness with respect to the subject matter recited in claim 5 is well founded. The various hindsight arguments advanced by the appellants against the proposed combination of Beck and Booth are not persuasive with respect to claim 5 because they are not commensurate with the breadth of this claim as compared with claims 1 and 17. The related argument that Beck teaches away from the proposed combination because it discloses an alternative separate stock delivery and control system embodiment is also unpersuasive. The appellants' rationale here is that "one skilled in the art who wanted to use a multi-chamber headbox in which different stocks are delivered to the chambers would use separate stock delivery and control systems" (main brief, page 14). Non-obviousness, however, cannot be established by attacking references individually where the rejection is based upon the

teachings of a combination of references. In re Merck & Co., Inc., 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986). In this case, the appellants' teach-away argument lacks conviction because it fails to take into account Booth's disclosure of the independent addition of chemicals to divided interior stock flows downstream of a common source.

In light of the foregoing, we shall sustain the standing 35 U.S.C. § 103 rejection of claim 5 as being unpatentable over Beck in view of Booth, but not the standing 35 U.S.C. § 103 rejection of claims 1 and 17, or of claims 2, 3, 10, 12, 14 which depend from claim 1, as being unpatentable over Beck in view of Booth.

We also shall sustain the standing 35 U.S.C. § 103(a) rejection of claims 9, 11, 13 and 15, which depend from claim 5, as being unpatentable over Beck in view of Booth since the appellants have not argued such with any reasonable specificity, thereby allowing these claims to stand or fall with parent claim 5 (see In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987)).

Claims 6, 7 and 16 depend from claim 5 and further require the addition of a chemical (claims 6 and 7) or of

chemicals and/or fillers (claim 16) into each of a plurality of stock lines or flows. For the reasons explained above, the combined teachings of Beck and Booth would not have suggested a method embodying this feature. Therefore, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 6, 7 and 16 as being unpatentable over Beck in view of Booth.

Finally, claim 4 depends from claim 3 and claim 8 depends from claim 7. Since Justus and Schacht fail to overcome the above noted deficiencies of the basic Beck-Booth combination with respect to the subject matter recited in claims 3 and 7, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 4 and 8 as being unpatentable over Beck in view of Booth, Justus and Schacht.

SUMMARY

The decision of the examiner to reject claims 1 through 17 is affirmed with respect to claims 5, 9, 11, 13 and 15, and reversed with respect to claims 1 through 4, 6 through 8, 10, 12, 14, 16 and 17.

No time period for taking any subsequent action in

connection with this appeal may be extended under 37 CFR

§ 1.136(a).

AFFIRMED-IN-PART

IAN A. CALVERT Administrative Patent Judge	)	
JOHN P. McQUADE Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JENNIFER D. BAHR Administrative Patent Judge	)	

JPM/ki

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